

FIG. 1

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (INPUT PHASE))

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

20

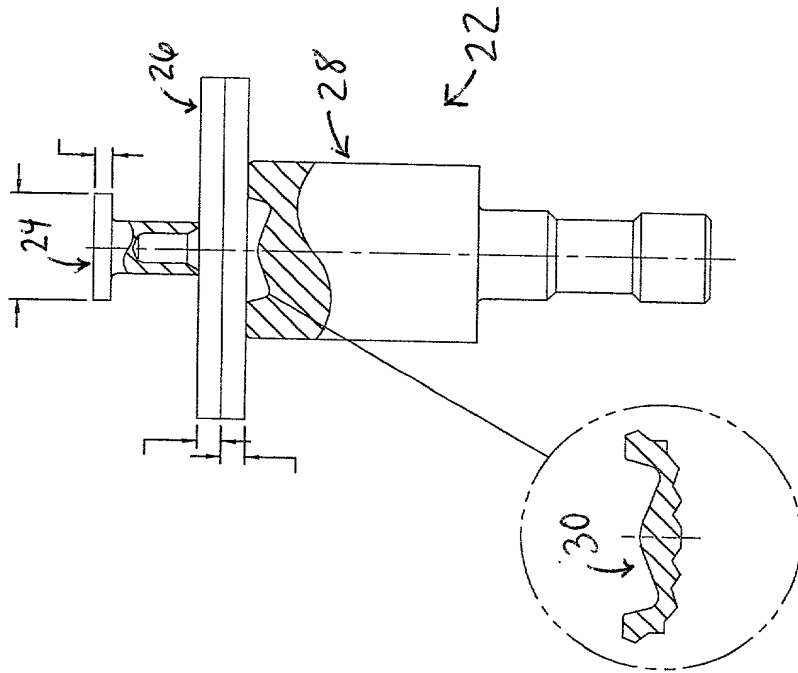


FIG. 2

FASTRIV[®] F.E.A. AUTOMATION
(PRE-ANALYSIS / PROJECT DEFINITION)

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

PROJECT DEFINITION

CUSTOMER NAME: _____

DATE: _____

ANALYSIS: _____

APPLICATION DESCRIPTION: _____

INTRODUCTION: _____

BACKGROUND: _____

RESULTS: _____

CONCLUSION: _____

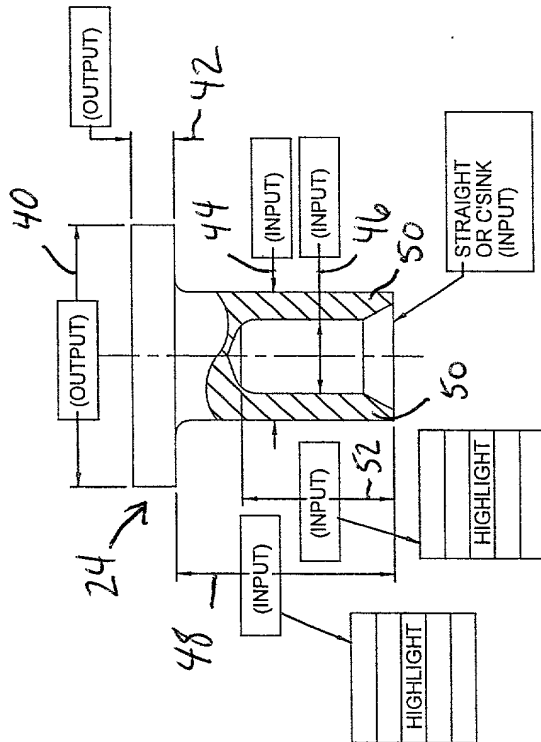
PROJECT NUMBER: _____

FIG. 3

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (RIVET DEFINITION))

PRE-ANALYSIS RIVET DEFINITION

HEAD STYLE: ○ FLAT COUNTERSUNK HEAD
○ ORDINARY OVAL HEAD
⊙ TINMAN HEAD



MATERIAL: INPUT

MAT'L TABLE

P/N: INPUT OR OUTPUT

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

FIG. 4

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (JOINT DEFINITION))

PRE-ANALYSIS JOINT DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

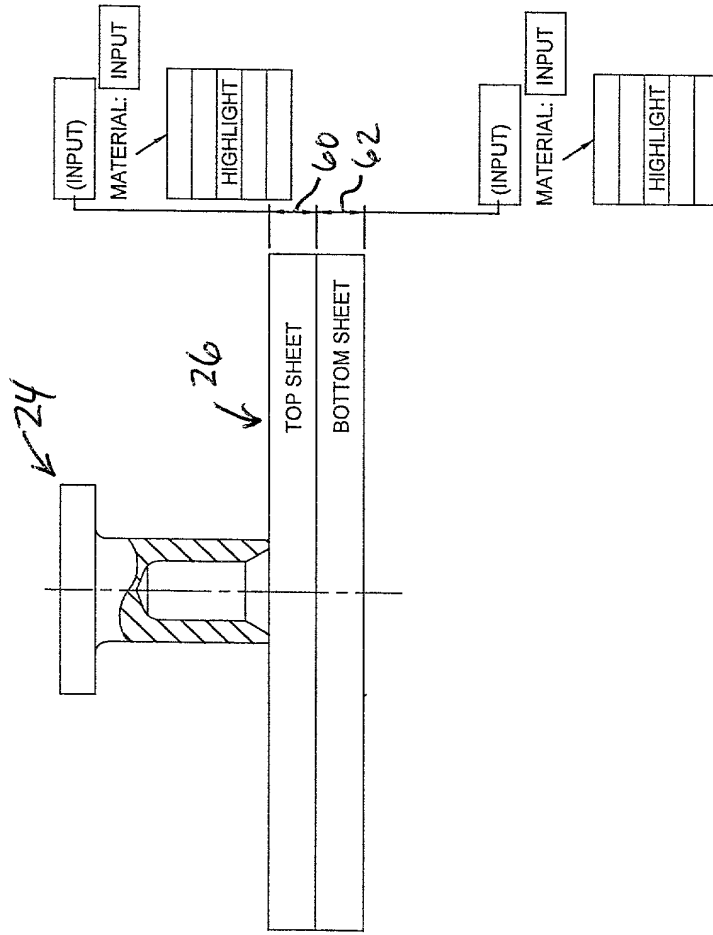


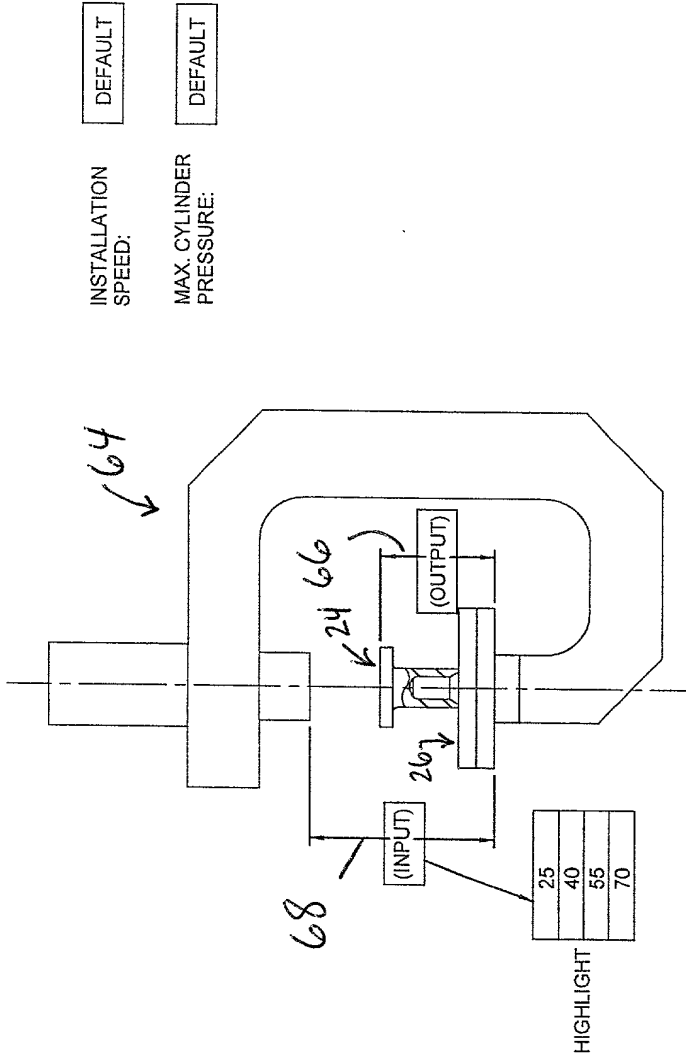
FIG. 5

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (INSTALLATION EQUIPMENT DEFINITION))

PRE-ANALYSIS INSTALLATION EQUIPMENT DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")



INSTALLATION
SPEED:

MAX. CYLINDER
PRESSURE:

FIG. 6

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (ANVIL DEFINITION))

PRE-ANALYSIS ANVIL DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

ANVIL TYPE:



PLAIN CONE ANVIL

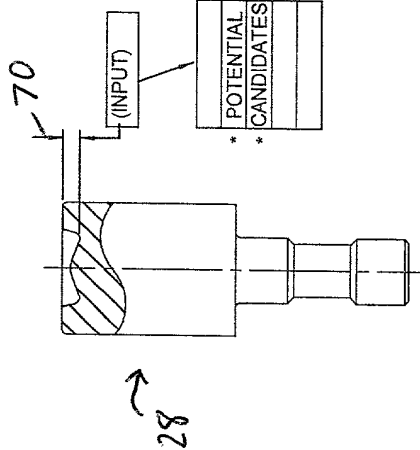


DUAL RADII CONVEX ANVIL



SINGLE RADII CONVEX

CHAMFERED ANVIL



MATERIAL: DEFAULT

* MODELED AS RIGID

P/N: INPUT OR OUTPUT

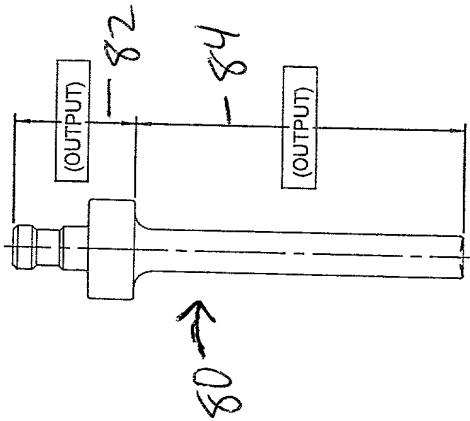
FIG. 7

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (PLUNGER DEFINITION))

PRE-ANALYSIS PLUNGER DEFINITION

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")



MATERIAL:

* MODELED AS RIGID

20

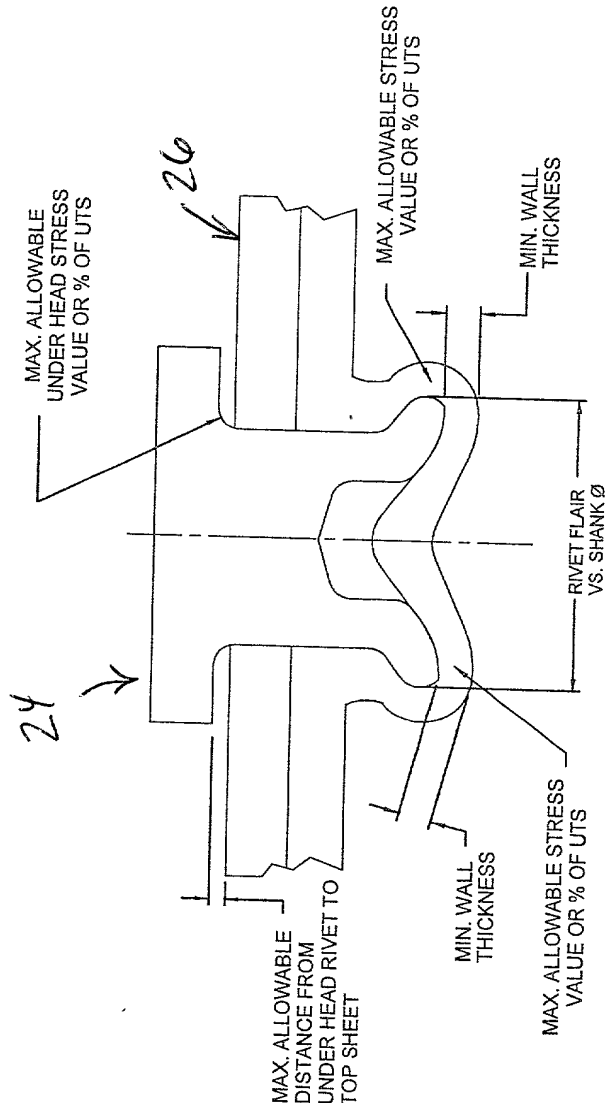
FIG. 8

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (DESIGN REQUIREMENTS))

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
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PLUNGER DEFINITION
DESIGN REQUIREMENTS
DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

RIVETED JOINT REQUIREMENTS



RIVET JOINT
STRENGTH REQUIREMENT

FIG. 9

FILE

EDIT

PRINT

PROJECT
DEFINITION

RIVET
DEFINITION

JOINT
DEFINITION

INSTALLATION
EQUIPMENT
DEFINITION

ANVIL
DEFINITION

PLUNGER
DEFINITION

DESIGN
REQUIREMENTS

DATABASE
SEARCH

F.E.A.
PARAMETERS

POST
PROCESSOR

ANALYSIS
(LIGHT "ON" OR "OFF")

FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS DATABASE SEARCH)

PRE-ANALYSIS DATABASE SEARCH

THE ABILITY TO SELECT
ANY OF COMBINATION
OF THE INPUTS AT THIS
STAGE. THIS WILL TIE
INTO A CENTRAL DATABASE

20

FIG. 10

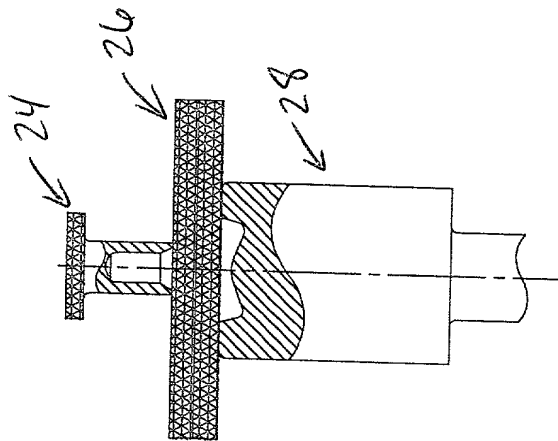
FASTRIV® F.E.A. AUTOMATION
(PRE-ANALYSIS (F.E.A. PARAMETERS))

FILE EDIT PRINT

PROJECT DEFINITION
RIVET DEFINITION
JOINT DEFINITION
INSTALLATION EQUIPMENT DEFINITION
ANVIL DEFINITION
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DATABASE SEARCH
F.E.A. PARAMETERS
POST PROCESSOR
ANALYSIS (LIGHT "ON" OR "OFF")

20

PRE-ANALYSIS F.E.A. PARAMETERS



OBJECT: ☒ RIVET (MESH, BCC)
☐ TOP SHEET (MESH, BCC)
☐ BOTTOM SHEET (MESH, BCC)

ADVANCED
SETTINGS

INTEROBJECT BCC
OK

FIG. 11

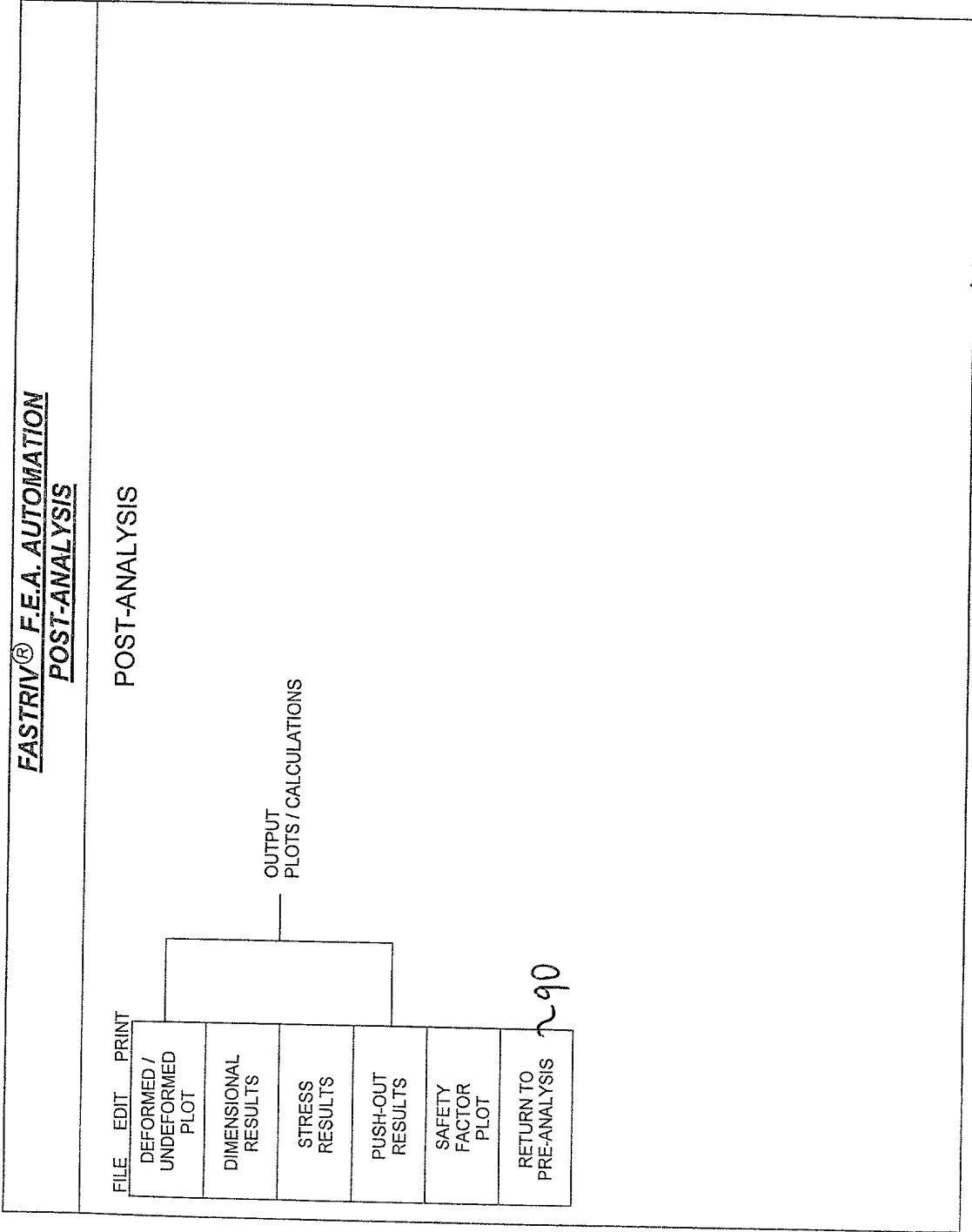


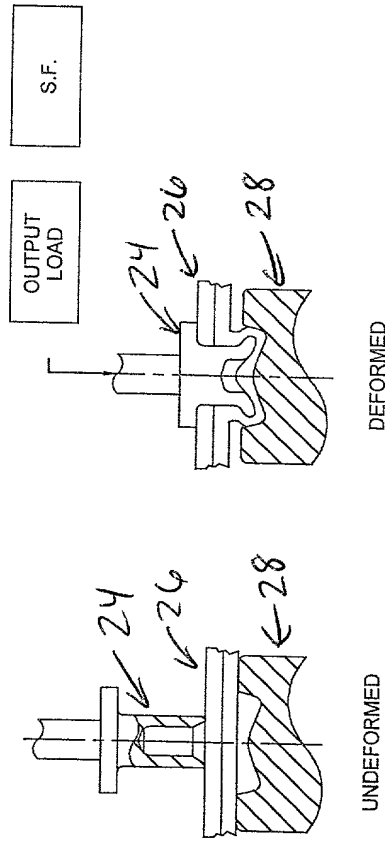
FIG. 12

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

FILE EDIT PRINT

DEFORMED / UNDEFORMED PLOT
DIMENSIONAL RESULTS
STRESS RESULTS
PUSH-OUT RESULTS
SAFETY FACTOR PLOT
RETURN TO PRE-ANALYSIS

DEFORMED / UNDEFORMED PLOT



UNDEFORMED

DEFORMED

L VS. Δ

* ZOOM CAPABILITY

* ADD / REMOVE ANY OBJECT(S)

* ANIMATION

FIG. 13

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

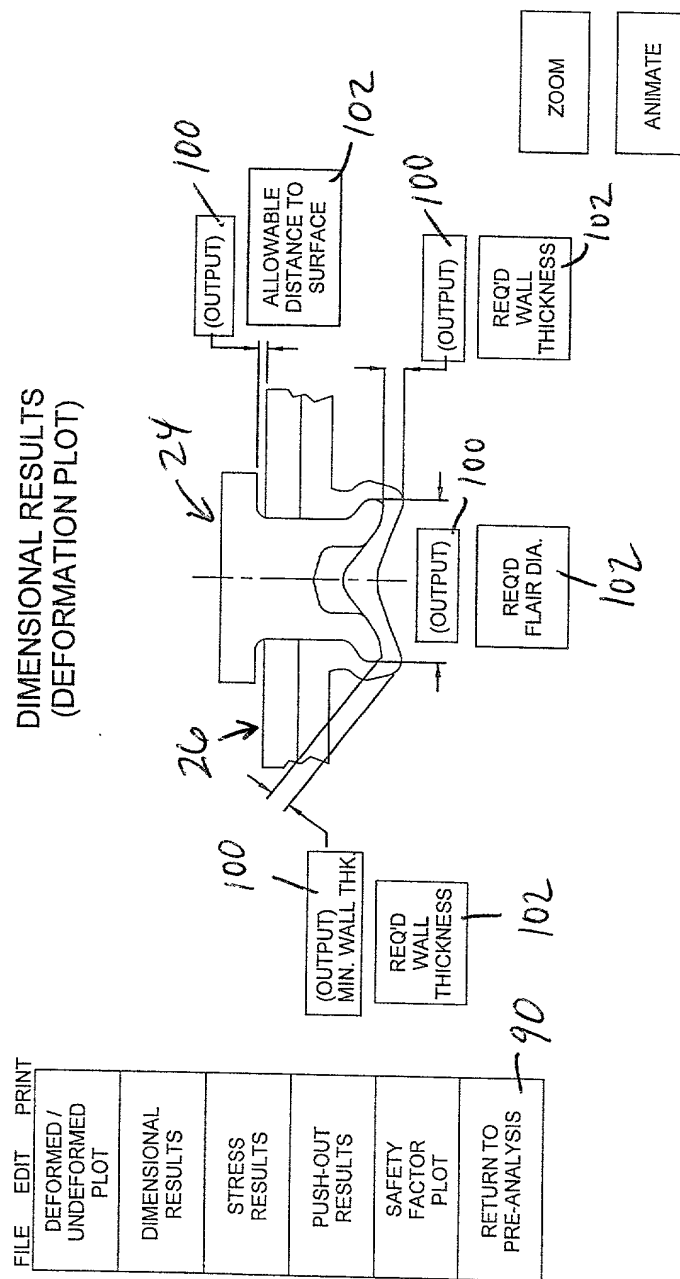


FIG. 14

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

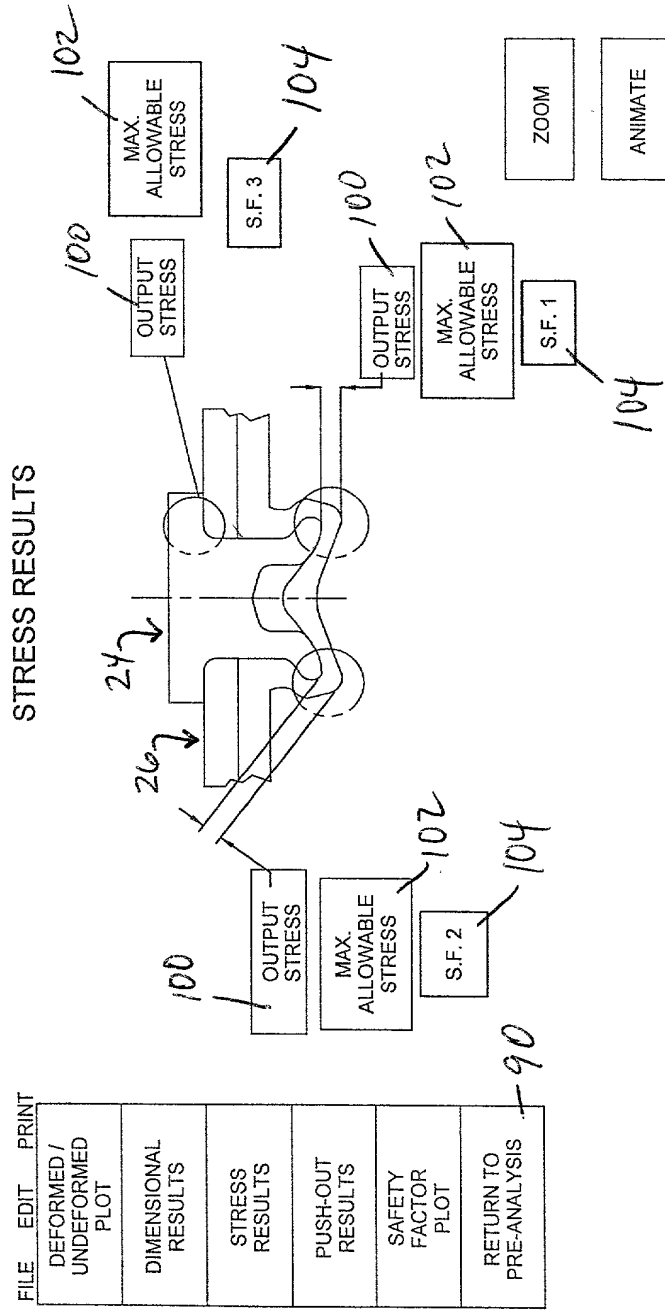


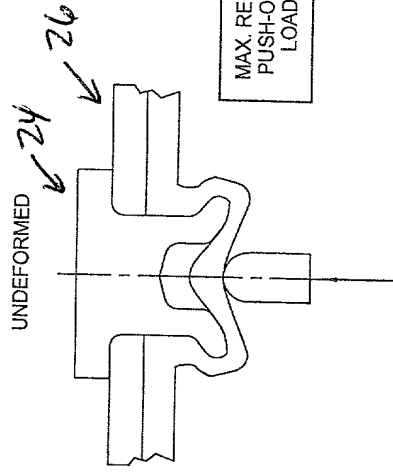
FIG. 15.

FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

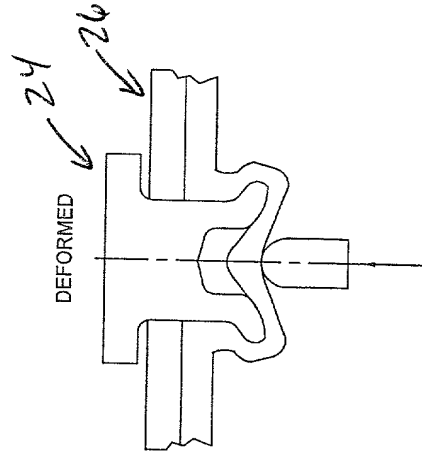
PUSH-OUT LOADING

FILE EDIT PRINT

DEFORMED / UNDEFORMED PLOT
DIMENSIONAL RESULTS
STRESS RESULTS
PUSH-OUT RESULTS
SAFETY FACTOR PLOT
RETURN TO PRE-ANALYSIS



MAX. REQ'D
PUSH-OUT
LOAD



PUSH-OUT
LOAD
@ YIELD

S.F.

L VS. Δ

ZOOM

ANIMATE

FIG. 16

90

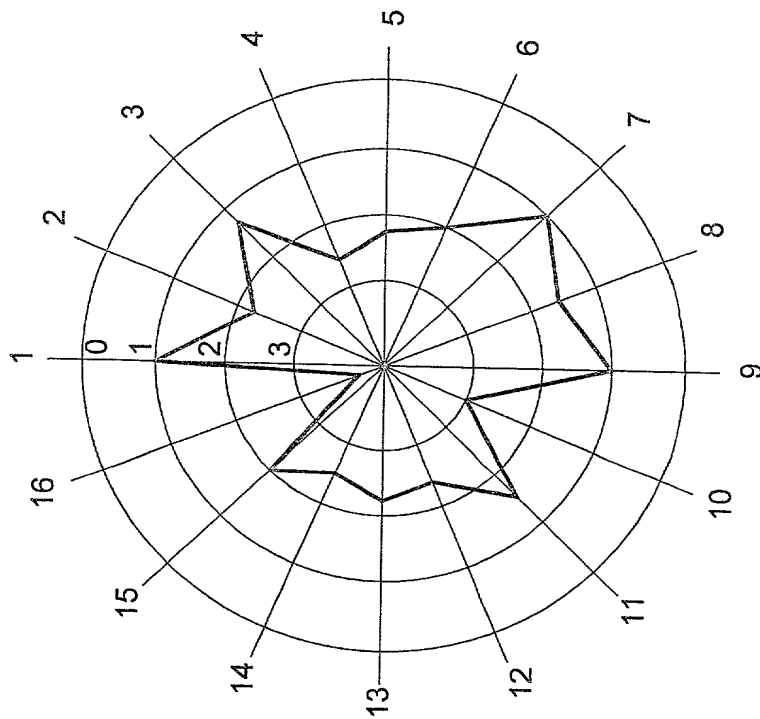
FASTRIV® F.E.A. AUTOMATION
POST-ANALYSIS

FILE EDIT PRINT

DEFORMED / UNDEFORMED PLOT
DIMENSIONAL RESULTS
STRESS RESULTS
PUSH-OUT RESULTS
SAFETY FACTOR PLOT
RETURN TO PRE-ANALYSIS

90

SAFETY FACTOR PLOT



LIST
SAFETY
FACTOR
VALUES

FIG. 17